

NATIONAL ELK REFUGE - NARRATIVE REPORT
1968

NATIONAL ELK REFUGE
BOX C
JACKSON, WYOMING

NARRATIVE REPORT
1968

PERSONNEL

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Refuge Biologist. Russell L. Robbins
Clerk-Typist (Resigned 2/68). Jean Lee
Clerk-Typist (E.O.D. 3/68-Resigned 11/15/68).
Nita Hinkle
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Foreman III. James W. Flower
Foreman II. Wesley W. Goetz
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U. S. Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
Jackson Hole, Wyoming 83001

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NATIONAL ELK REFUGE
ANNUAL NARRATIVE REPORT

1968

I GENERAL

A. Weather Conditions

The weather data are taken from the Teton National Forest records, one half mile west of refuge headquarters.

	<u>Precipitation</u>	<u>Snowfall</u>	<u>Max Temp</u>	<u>Min Temp</u>
January	1.30	28.75	43°	-25°
February	.83	9.50	47°	-22°
March	1.19	18.25	60°	4°
April	1.13	9.75	69°	9°
May	1.92	1.00	76°	18°
June	2.15	Snow!	85°	25°
July	.36		90°	24°
August	2.99		89°	27°
September	.70	.50	81°	20°
October	.50	T.	68°	7°
November	1.35	9.00	48°	-11°
December	1.16	25.75	42°	-26°
Totals	15.58	102.50	90°	-26°

The total precipitation of 15.58 inches for the entire year was only slightly above the long term average of 14.83 inches. The January through May period is the time that our summer irrigation water is laid down in the high country and this snow cover can vary greatly. Prime examples are the past three years. In 1966 during these five critical months only 35" of snow with 4.65" of moisture fell, while in 1967, a whopping 119" of snow piled up with 7.17" of moisture. This year we had 67" of snow containing some 6.37" of water. In summary: 1966 was a short-water summer with no late summer water; 1967 precipitation provided more than adequate water while this year's 67" of snow and 6.37 proved to be adequate for all early summer irrigation of cultivated crops (June-July) and even held up well for late summer

irrigation of grassland water spreading. Weatherwise, the January through April winter-elk-feeding period was a relatively mild one. Temperatures during the first two months of the period got down to only 25° below and this, for here, is an above average low! Of special note was the exceptionally mild and sunny March, an assist in bringing elk through the winter in good shape. The summer highlights were an abundance of rain in June and August, but the moisture was not very effective because of exceptionally cool temperatures. July was exceedingly dry but much appreciated by the hay contractor. September and October had little moisture but what showers we had were nicely spaced so that they held the range fire danger down to an acceptable level.

November and December were exceptionally mild months with little snow cover on the refuge.

B. Habitat Conditions

Forage growing conditions during June, the magic month for all living things in this north country, certainly were far from ideal. There was a good rain fall to assist growth but this was more than offset by unfavorable growing temperatures. There were seven nights down to freezing and twelve days when the maximum daily temperatures did not exceed 65° (only one of these days coincided with a freezing night temperature). This left very little growing weather to produce a hay crop in or to promote a lush growth of upland grasses. Hay stands on Mormon Row grew slowly in June and a July 5th date to begin the hay harvest had to be postponed nearly two weeks until the hay stands had reached a reasonable height.

All of the irrigated hay and grass stands on the refuge proper were again left standing for late fall elk pasture. This included the experimental plantings in the headquarters unit. (see V Field Investigations or Applied Research of this report)

II WILDLIFE

A. Migratory Birds

Trumpeter Swan

The peak population of Trumpeters occurred on January 2 when thirty-seven were observed. Practically all streams and creeks in the valley were frozen over at that time and the swans concentrated on two spring heads where they were fed surplus wheat. After February 10th a warm spell moved in and creeks opened up

throughout the valley. This resulted in a dispersal of the swans with only a dozen birds remaining by the end of the month.

Our May 1st population was down to six birds. On May 31st the pair which nested on Romney Pond brought off five cygnets. In addition, a pair showed up in the lower refuge marsh with two cygnets. In true fashion, the Romney Pond pair moved their brood, now numbering four, to Pierre's Pond, showing up there on August 6th. A total of six cygnets were raised on the refuge in 1968.

The following numbers of swans were observed during the weekly waterfowl census (September 1 - December 31, 1968).

	<u>Date</u>	<u>Adults</u>	<u>Cygnets</u>
Sep.	10	4	0
	16	8	0
	23	6	0
	30	4	0
Oct.	7	16	9
	15	5	0
	22	8	9
	28	4	2
Nov.	5	10	0
	12	2	0
	25	7	3
Dec.	2	2	0
	9	9	3
	17	2	1
	23	8	0

Canada Geese

The first goose nesting activity was noted on April 15 when a pair of geese were observed nesting on top of the shade shelter in the Elk Exhibition Pasture. In addition, nesting activity was noted at the nesting "tub" on lower Nowlin Creek, on the nesting platforms at Bill's Bayou and Romney Pond, and on the island in the middle of Nowlin Pond.

The peak number of geese seen on the refuge during the period from September 1 through December 31 was on December 9 when 243 were observed.

Ducks

The peak numbers of the various species of ducks observed during the September 1 - December 31 census period were as follows:

<u>Species</u>	<u>Date</u>	<u>Number Observed</u>
mallard	Nov. 12	162
gadwall	Sep. 23	144
baldpate	Sep. 16	83
pintail	Sep. 23	51
green-winged teal	Oct. 22	252
blue-winged teal	Sep. 10	43
shoveler	Sep. 16	12
ring-necked	Nov. 12	17
canvasback	Sep. 23	10
goldeneye	Dec. 23	293
bufflehead	Oct. 15	14

Coots

The peak number of coots recorded during the fall census was 342 on September 10. No coots were seen after November 4th.

B. Upland Game Birds

Sage grouse observations for the year are as follows:

3/3 50 birds on portion of refuge west of the highway
 5/27 13 birds 1/2 mile north of the McBride bridge
 9/18 sage grouse hen with 8 young in Long Hollow
 9/23 1 bird in Long Hollow and 4 birds at North Gap
 10/26 17 grouse at North Gap
 12/1 75 grouse between Flat Creek and North Gap
 12/19 48 grouse in Long Hollow

Other Grouse

No ruffed grouse were seen nor were any blue grouse observations recorded this year.

C. Big Game Animals

Elk

Elk feeding on three feedgrounds began on January 29. With the arrival of unusually warm and open weather in early March the elk began moving off the feedgrounds. Those at headquarters, always the first to leave, moved off the feedground repeatedly at this time and feeding was discontinued at this one location on March 7th. Two feedgrounds were then maintained through March 30. At this latter date, refuge lowlands were free of snow and only enough elk remained on an "on-and-off" basis to necessitate one feedground. Abruptly warming weather and a "move-out" of the remaining elk onto the now greening lowlands terminated all elk feeding on April 8th. A total of 55,429 bales of hay were fed during the seventy-one day feeding period. The overall condition of the herd was excellent when feeding was terminated on April 8th.

An elk census was made February 15th with 6,809 elk counted on the three feedgrounds. The breakdown was 689 - bulls, 429 - spikes, 1,076 - calves, 4,465 - cows and 150 unclassified. The calf-cow ratio was 24.1 calves per 100 cows. In 1967 it was 32.8 calves per 100 cows. Fifty-three elk were lost during the seventy-one days the elk were fed. In addition, twenty-one head were lost prior to the time feeding began for a total loss of seventy-four head (19 bulls, 1 spike, 35 cows and 19 calves) during the winter period.

On March 18th, six cows, two bull calves, two spike bulls and one young bull were captured in the corral trap and then moved to the Exhibition Pasture. On March 21st two large bulls were taken with the tranquilizer gun and placed in the pasture. It is interesting to note that the six cows produced seven calves. After being a very popular tourist attraction during the summer months, the herd (totaling twenty head) was released on September 3rd as the tourist traffic had dropped to near zero.

A count on August 2nd revealed that the summer resident elk herd on the refuge consisted of 216 animals. Of this total, 102 were females (yearling or older), two calves, ninety-two spike bulls, three adult bulls and seventeen unidentified.

When the refuge elk hunting season opened on October 12th there were approximately 150 elk on the refuge - but not for long. Within an hour or so most of the elk moved to the southeast and off the refuge.

The fall elk buildup on the refuge began shortly after the close of the refuge hunting season on November 1st and was as follows:

<u>Date</u>	<u>Number of Elk on Refuge</u>
Nov. 6	135
7	200
8	500
12	2,600
22	4,000
25	4,500
26	5,000
27	6,000
Dec. 2	6,700
26	7,000
31	7,000

During the period of November 6th through December 20th gentle hazing was very successful in keeping the elk north of Flat Creek and also in the hills to the east of the refuge. This resulted in only slight use of the late winter range (portion of refuge south of Flat Creek) prior to December 20th. With the accumulation of approximately ten inches of snow on the northern portion of the refuge, along with cold weather, hazing of the elk was terminated on December 20th and the elk were allowed to move onto the southern portion of the refuge. At the close of the year a herd of approximately 7,000 elk were wintering on the lower part of the refuge and with only from one to three inches of snow cover the forage was readily available.

THE HERD PATRIARCH EUGLING HIS NOTICE TO ONE AND ALL AT THE PEAK
OF RUTTING SEASON





ROLLING MOON AT DUSK

Moose

Moose can be found on the refuge throughout the year but it is only during the winter that their number exceeds a dozen animals. During the winter twenty-five to thirty head winter in the Gros Ventre River bottoms on the north edge of the refuge.

Bighorn Sheep

As in the past, sheep wintered on the east edge of the refuge in the rough cliffs of Sheep Creek Canyon. Thirty sheep were seen there on February 11th, thirty-three on April 3rd and seventeen on April 14th. By early June they had dispersed into the high country. In late November sheep moved back to the Sheep Creek Canyon area with eighty-two observed on November 22nd. From November 22nd through December 7th considerable breeding activity was noted.

Mule Deer

Following the usual pattern, deer moved onto the refuge in mid-January and remained until April. On January 16th nine deer were seen near Miller Butte (just east of "Gap" road); on March 7th seventy-two were observed in the "Gap" and twenty-one near Curtis Canyon; on March 15th 107 were on the east side of Miller Butte.

D. Fur Animals, Coyotes, Rodents and Other Mammals

Coyotes

Coyotes are very abundant on the refuge throughout the year. It is not uncommon to see twenty-five or thirty coyotes during a trip out on the refuge during the winter months.

Uinta Ground Squirrels

The Uinta population seems to be stable.

Other Mammals

Badger observations are common. On February 2nd a red fox was seen in the elk exhibition pasture and on December 5th a bobcat was seen in the shop area.

E. Eagles, Hawks, Owls and Ravens

Eagles

Eagles observations are as follows:

Golden Eagles

<u>Date</u>	<u>Number Seen</u>	<u>Location</u>
2/21	1	Lower refuge

Bald Eagles

<u>Date</u>	<u>Number Seen</u>	<u>Location</u>
1/10	1	Nowlin Creek
2/17	2	Shop area
3/28	2	Over refuge marsh
4/3	1	Exhibition pasture
5/11	1 (immature)	Lower refuge
8/14	3 (immature)	Mormon Row
	2 (adults)	
10/24	1	North Gap

Hawks

Rough-legged, sparrow, marsh and red-tail hawk observations were about the same as in past years.

Owls

A great horned owl was seen near the shop area on September 9th and a short-eared owl was observed in the lower headquarters field on November 21st.

Ravens

The winter raven population of the refuge averages about 40-50 and half this many in the summer.

F. Other Birds

Greater Sandhill Cranes

The first sandhill observation of the year was on March 29th when two were seen on Nowlin Creek. Some nesting occurred on the refuge and on June 14th a pair with two young were seen at Romney Pond. The fall buildup of these birds began in early September and by September 19th they had all moved on south.

G. Disease

Elk

From February 11 through March 2 there was an unusual number of losses in the cows (twenty). Tissue was taken from two of the animals with one of the samples sent to the Sybille Research Station (Wyoming Game and Fish Department) and one to the Bear River Research Laboratory, Brigham City, Utah. The Sybille sample was negative while preliminary analysis from Bear River indicated the cause of death was a bacteria resulting in hemorrhagic septicemia. Starting with the week of March 3, cow losses dropped to normal with but four more losses in the next five weeks.

III Refuge Development and Maintenance

A. Physical Development

Elk feeding began January 29 and continued through April 8th (seventy-one days). It requires forty-two man days per week for the seven day a week feed program. Upkeep of equipment, coordination and supervision also took most of the time of two additional people. Jobs incidental to elk feeding were repairs to hay sleds, wagons, hay conveyors, vehicles and tractor equipment; greasing of equipment, snow removal around sheds for access and for parking of visitors, cleanup of hay sheds and hauling off of bale ties. These activities consumed many more hours of labor not directly connected with the actual forking out of the 55,429 bales of hay fed to the elk herd. With the arrival of bare ground, jobs, many and varied, were buttoned up before warm

weather permitted us to start on our general farming duties. A few of the chores attended to included sled painting, storage, "summerizing" and storage of other equipment used in the elk feeding program. Spring jobs related to our road system included removal of and storage of snow fencing and roadside snowplow guide poles. Hauling many loads of light pit run gravel and spreading, followed by road grading. Irrigation ditch clean out was completed on some 110 miles of our water spreader net work with the use of tractors. A backlog of 175 canvas irrigation dams was built up with the construction of additional dams and repair of others. Building of wooden headgates, placement and repair of existing structures was a prime job function as we waited for suitable farming weather to arrive.

Finally, with the arrival of warmer weather, farm chores included the irrigation of 1,000 acres of hay-grass stands on the refuge proper. Some 800 acres of the Mormon Row hay stands were spring toothed to open up the stands where brome grass was taking over. Sixty-five tons of Ammonium Nitrate fertilizer was spread on "The Row" haylands under contract. Application was at the rate of eighty pounds of available nitrogen per acre. Fortunately, following the application, a slow soaking rain percolated the fertilizer into the plant root systems. Discing, leveling and planting of creeping meadow foxtail was completed on forty acres on the headquarters unit. Some of the other chores included the removal of rocks and debris from hay meadows to facilitate farming operations and the removal of beaver dams on main canals supplying irrigation waters. The never-ending job of ditch maintenance and headgate maintenance is always a must to prevent wash outs when supply canals are brim full of water during the many weeks of the irrigation season.

Some of the other chores, either sandwiched in or following our major farming operation, are as follows: removal of old fence lines, picking up old abandoned machinery for scrap, placing and later removing markers for aerial photo work of the refuge, filling goose nesting cribs, property inventory, repair loading dock at

refuge shop, removal of fifteen large cottonwood stumps at headquarters then filling holes and seeding. Real property maintenance required some work on all of our buildings. Most of them were given a roof painting. The office floors were sanded, varnished and waxed, useless bookcases were removed and a leaflet dispenser installed. Care and maintenance of the headquarters ground was fully attended to, giving the office area the neat appearance it should have. Other building maintenance included the replacement of the front porch decking and underpinning at Quarters #1; overhead insulation installed and some interior painting and basement wall repairs at Quarters #3. Both the top and bottom floors of the shop were repainted, including all the many storage bins in the mechanics' work shop portion of the building. Sewer cleanout and periodic furnace servicing and inspections were checked off at all quarters. A portion of the headquarters' guest room was remodeled into a knotty pine interior office for the biologist. Various construction jobs were fitted in to the work schedule. A large 8 X 10 foot sign was made, giving recognition to the Izaak Walton League for their donation of 1,760 acres to the Elk Refuge in 1927. (See photos of this report) Three rustic signs were made for the roadside wildlife program and six roadside directional signs.

For the benefit of serious bird watchers and photographers, our crew built a bird blind that was then placed at Miller Spring where our winter waterfowl concentrate.

Two sturdy hay racks were built on new farm wagon chassis, sporting 11:00" X 15" "doughnut" tires.

Our roads and trails take considerable manpower to keep in usable condition. Normally, we have the winter snow removal along the main road done by contract and it was again handled in this manner, but snow removal at headquarters, around the shop area and to the visitor hauling--staging and parking area must be done by refuge personnel. We graded the main refuge road only four times during the summer because of insufficient moisture. The road as far as the Twin Creek Ranch turn off was kept in good condition. We treated this portion to a sprinkling of oil several times during warm weather.



HAY HARVEST TIME ON MORMON ROW



IZAAK WALTON LEAGUE ADDITION NATIONAL ELK REFUGE

ARE HERE

1

WYOMING
NATIONAL
FOREST

THE IZAAK WALTON LEAGUE OF AMERICA
WAS ORGANIZED IN CHICAGO IN 1922.
THE FIRST MAJOR PROJECT OF THE LEAGUE
WAS TO PURCHASE LAND FOR THE ELK
THAT WINTER IN JACKSON HOLE. ON JUNE 8, 1927
MR. CHARLES W. FOLDS AND MR. J. R. CUNNINGHAM,
ACTING AS TRUSTEES FOR THE LEAGUE,
DONATED 1760 ACRES TO THE BIOLOGICAL SURVEY
FOR "THE PRESERVATION FOR THE PLEASURE AND
BENEFIT OF FUTURE GENERATIONS OF AMERICANS
OF THE FEW REMAINING HERDS OF THE AMERICAN
ELK". THESE LANDS, AS OUTLINED ON THE MAP,
WERE PURCHASED FOR A SUM OF \$36,800 FROM
MONIES ACQUIRED BY POPULAR SUBSCRIPTION
FROM THE PEOPLE OF THE UNITED STATES.
THE IZAAK WALTON LEAGUE CONTINUES TO BE
A LEADING ADVOCATE OF THE WISE USE AND
CONSERVATION OF THE NATION'S RENEWABLE
NATURAL RESOURCES.

Used motor oil was obtained from half a dozen service stations in town who phone us when their 500 gallon underground tanks approach the full marker. This oil is quickly picked up with the use of our truck mounted 500 gallon tank and large capacity diaphragm pump. The truck can sprinkle (with use of a shop engineered gadget) some 500 gallons of oil on a quarter of a mile of road and return for another load in a matter of minutes. Some 3000 gallons were sprinkled on and graded in during one day's operation and this type of treatment has practically eliminated our severe dust problem besides tailoring the road into better condition. To reduce the winter pile-up of snow onto our main arterial near the shops, the real bottleneck on our winter snow removal, some 200 yards of four foot high bank was backsloped. The extracted material was used to widen the crown of a nearby dike and to increase the fill area at the shop for parking.

The three week permit elk hunt required seven man days per week of assigned patrol and several days of voluntary time. Defensive Driving courses were attended by all staff members except the clerk. One man attended a fire control training course for two days, and another attended a supervisory training class for five days.

B. Plantings:

Cultivated Crops

A thirty-eight acre experimental grass plot in the headquarters area planted previously to intermediate wheat (twenty acres) and timothy (eighteen acres) was plowed under when it was determined that these two plantings were not palatable to elk. These plots were then planted to meadow foxtail and Garrison creeping meadow foxtail. By fall freeze-up the new seeding had begun to fill in nicely. If we don't get a winter kill there should be a good stand here for next fall's elk herd. Hay harvested at Mormon Row totaled 1,859 tons. Growing conditions were unfavorable for hay production during June and July and early hay cuttings in the valley were fifty to sixty percent of normal. Cutting of refuge stands

at Mormon Row was delayed until July 12th. We went into the year with 5,250 tons of hay in storage in our twelve hay sheds. During the seventy-one days of elk feeding a total of 55,429 bales of hay was fed. This amounts to 2,064 tons. When the hay harvest was completed we put 1,859 tons back into storage from Mormon Row plus seventy-three additional tons purchased by the Wyoming Game and Fish Department from local ranchers. We, therefor, entered the winter period (December 1968) with 5,118 tons of hay in storage.

C. Collections and Receipts:

None.

IV RESOURCES MANAGEMENT

A. Grazing:

Twenty saddle horses, property of Grand Teton National Park, are wintered on the refuge each year as covered by previous agreement. The parcel of land west of Highway 89 covered by Special Use Permit No. ELK-18 is under lease to Peter B. Meade. Very little use is made of this steep forty acre hillside plat across the highway from the refuge. This permit expires February 28, 1970. The one advantage we gain by allowing this permit is that we don't have to maintain a fence on the steep slope of the west boundary, which we would if it were not leased. The east line is the highway boundary fence.

V FIELD INVESTIGATION OR APPLIED RESEARCH

In August of 1968 Dr. Robert C. Bergstrom, Associate Professor of Parasitology, Division of Veterinary Science, University of Wyoming started a two-year study of parasites of elk. Dr. Bergstrom is primarily interested in the occurrence of lungworm (Dictyocaulus sp.) in elk. The refuge biologist is assisting Dr. Bergstrom in this study by collecting and examining fecal samples from the resident summer herd and the wintering herd for lungworm larvae and by necropsing animals killed during the refuge elk season.

VI PUBLIC RELATIONS

A. Recreational Use:

Total visits for the year reached 232,382 and almost exclusively were wildlife oriented. The main attraction is still viewing elk, either on the winter feed grounds or of our small herd held for the summer tourist in the elk exhibition pasture. Other visitors stop, too, to view the trumpeter swans on lower Flat Creek. Bird watching, fishing, hunting, horseback riding, all add a little to the visitor total.

The Jackson Junior Chamber of Commerce was given a non-profit concession permit (No. 14-16-002-3187) to haul refuge visitors onto the elk feed grounds. The contract is for a five year period ending April 30, 1973. Fees at present, \$1.50 for adults and \$.75 for children ages 6 - 12, were established to cover the cost of providing the services. This season the passenger hauling began on a trial basis before the feeding of elk began and worked out nicely. Many elk, often 1,500 head, fed within hauling range of the visitors' staging point and, we found, would tolerate a sled full of visitors to within twenty-five feet. When elk feeding began on January 29 the only advantage the visiting public had was a larger group of elk to view.

The report from the operator of the Jr. Chamber concession reveals that a total of 4,104 people rode their sled last winter to view the elk herd. This is down from the 5,466 hauled in 1967. The breakdown for the three years the operation has been in operation is as follows:

<u>Year</u>	<u>Adults</u>	<u>Children</u>	<u>Free</u>	<u>Income</u>
1966	1,895	558	No figure	\$ 2,921.15
1967	3,125	734	1,607	4,638.20
1968	2,618	665	821	4,425.75

The last season that the refuge permitted visitors to ride "for free" on top of our hay sleds, we hauled 6,700 passengers to view the elk herds, with as many as 1,100 on a weekend. This had us swamped. It takes thirty-five bales to form a tier of hay on a hay sled, then with thirty to forty people on the top tier of the load you have about one person per bale. To pitch off 105 bales of hay from such a moving platform using a sharp tined tool is a feat in itself but with a person sitting on each bale it becomes quite a problem.



THE SLEIGH RIDES OPERATED BY THE JAYCEES TAKE VISITORS RIGHT INTO
THE HEED FOR



.....AN UNFORGETTABLE AND UNIQUE OPPORTUNITY TO
OBSERVE SOME REAL TROPHIES.....



.....AS WELL AS SOME OF THE FREAKS

THIS VIEW OF FLAT CREEK AND MILLER BUTTE IS PRESENTED TO TOURISTS
AT THE HIGHWAY TURNOUT IMMEDIATELY NORTH OF THE TOWN OF JACKSON



A wildlife program was initiated this summer at the elk exhibition pasture adjoining the Yellowstone highway. Here, at roadside turnouts, many tourists who paused to view the small (eighteen) but representative herd of elk were contacted. This opportunity was used to brief travelers on the purpose of the Elk Refuge and its operations. The two men selected for the public relations job were a local high school biology teacher and a wildlife management major from Iowa State University. Both were provided with a uniform and completely briefed before being subjected to the multitude of questions from the curious tourist. These summer employees did a fine job. They were double shifted on a sixteen hour day on the three busiest days of the week and on the remaining days the program was presented on an eight hour day basis. A considerable amount of information was obtained. Some useful, some interesting, some amusing and some surprising. Some of the useful included a list of the most asked questions and these leads were worked into a revised refuge leaflet. One of the surprising bits was a quick spot check on twenty-five cars that stopped on July 3rd. They represented twenty-one states and averaged 4.2 persons per car.

During June, July and August slightly over 160,000 people stopped at the roadside turnouts, either to hear the brief talk or to view and photograph the elk. The program was well received both by the tourist and by the local community. It was felt locally that we were fulfilling a need for information that has been lacking in the past. We now face the challenge of making improvements and continuing with only limited funds.

B. Refuge Visitors:

<u>Name</u>	<u>Organization</u>	<u>Date</u>
Kenneth Martin	Wyo Game & Fish Dept	1/8
Charles Cadieux	FWS-Albuquerque	1/22-25
Donald Saul	Moral Rearmament	2/5
M. G. Sheldon	FWS-Albuquerque	2/25-28
John Gottschalk	FWS-Washington (Director)	3/15-17
William T. Krummes	FWS-Albuquerque (Regional Director)	3/15-17
Marcus Nelson	FWS-Albuquerque	3/14-17
Masaru Ichijyo	Japan Broadcasting Corp	5/2
Hiroyoshi Nimura	Japan Broadcasting Corp	5/2
Reiji Nakatsubo	Japan Broadcasting Corp	5/2
Masashi Yoshii	Chief of Banding Center Tokyo, Japan	5/2
James K. Morgan	Idaho Game & Fish Dept	5/7
Dave Kimbrell	FWS-Albuquerque	5/14-25
Victor Schmidt	FWS-Albuquerque (Asst Regional Director)	5/20-21
Jim Harmon	FWS-Albuquerque	5/20-21
Bud Allred	FWS-Albuquerque	5/20-21
Ted Baker	Wyo Game & Fish Dept	5/21
Kenneth Martin	Wyo Game & Fish Dept	5/21
Francis Petera	Wyo Game & Fish Dept	5/21
Ernest Wampler	Wyo Game & Fish Dept	5/21
Paul McNeal	Wyo Game & Fish Dept	5/21
Bryan L. Kepford	Solicitor's Office, Denver	5/22
Phillip J. Feiger	Bear River NWR	6/3
4-H Group	(46 youngsters, 16 adults)	6/11
W. O. Morsback	Capetown, South Africa	6/14
Mr. & Mrs. John Hopcraft	Nakuru, Kenya	6/20
Richard Bower & family	Sacramento NWR	6/26
Raymond Buller	FWS-Albuquerque	6/29
M. G. Sheldon	FWS-Albuquerque	6/26-29
Ed White	CCC-Malheur	7/2
Rodney Kreg	Bear River NWR	7/11
Des Bartlett	Photographer	7/22
Santosh Sahu	Dept of State, India	7/15-17
Peter Potter	Director, Parks & Game Board, Natal, South Africa	7/26-30
Owen Vivian	Red Rock Lakes NWR	7/28
Maurice Wright	Bear River NWR	7/30

Victor Schmidt	FWS-Albuquerque (Asst Regional Director)	7/31-8/1
Marcus Nelson	FWS-Albuquerque (Reg. Supr. Refuges)	7/31-8/1
Ralph Towne	Lake Andes NWR	8/8
Dorr Green & wife	FWS-Denver, Ret	8/13
Dr. R. Bergstrom	Univ of Wyo, Laramie	8/14
Jack Sypulski	FWS-Albuquerque	8/15-17
Clarence Faulkner	FWS-Minneapolis	8/15
Victor Schmidt	FWS-Albuquerque (Asst Regional Director)	8/23
Horace W. Albright	NPS Director, Ret	9/9
Bob McVein	FWS-Portland	9/13
Kieth Bayha	RBS-Boise, Idaho	9/17
J. N. Lowe	BOR, Washington, D. C.	9/20
J. Brad Bauman	BOR-Denver	9/20
Dr. Oliver Scott and group	Audubon Society, Casper	12/31

C. Refuge Participation

A variety of activities demanded refuge participation. In addition to the standard meetings and contacts with cooperators such as Wyoming Game and Fish Department, Soil Conservation Service, U. S. Forest Service, National Park Service, Jackson Jaycees, County Commissioners and others, the personnel were involved in the following manner:

1. Redfearn attended luncheon of local C.A.P. 1/4.
2. Redfearn attended Chamber of Commerce meeting relative to tourist rest center they propose for construction on refuge lands. 2/10
3. Redfearn attended Jackson Hole Outfitters meeting. 2/12
4. Redfearn and Blanchard conducted tours for 100 second graders. 2/7-8
5. Redfearn and Blanchard met with Jim White, Wyoming Game and Fish Director, Walter Reynolds, Chairman of Game and Fish Commission, and Kenneth Martin, District Supervisor, relative to acquisition of the Soest property and public hearing on refuge recreation. 2/13
6. Redfearn, Blanchard and Sheldon attended Jackson Hole Cooperative Elk Studies Advisory Council meeting. 2/26
7. Director Gottschalk, Regional Director Krummes and Regional Supervisor Nelson were present to conduct a public meeting relative to the recreation plan for

the refuge. Approximately 125 persons were in attendance to hear the refuge proposals and to make statements presenting their views and views of organizations they represented. Senator Clifford P. Hansen was at the meeting and made a brief summarizing statement. 3/16

8. Redfearn attended Scenic Resources Forum meeting relative to master planning and zoning of city and county. 4/16
9. Redfearn attended Game and Fish meeting at the Wort Hotel. Purpose of meeting was presentation of hunting season recommendations for 1968. 4/17
10. Redfearn attended Chamber of Commerce dinner for Highway 26 Association and Motor Club Representatives. 4/29
11. Redfearn presented books to High School library through Mrs. Avis Ranck, President, Parents Educational Council. 4/30
12. Blanchard conducted tour for Japanese television crew. 5/2
13. Redfearn attended Izaak Walton League Convention at Cheyenne, Wyoming and participated in the formal program. 5/2-5
14. Boy Scouts picked up antlers on refuge. 5/4
15. Redfearn and Blanchard assisted Jackson Boy Scouts with their antler sorting and grading. 5/11
16. Redfearn attended the Wyoming Wildlife Federation annual convention at Casper. 5/17-19
17. Redfearn and Blanchard attended evening meeting of Scenic Resources Forum on Wilderness at Jackson. 5/23
18. Redfearn assisted the Forest Service and Wyoming Game and Fish Department with presentation of program to wildlife students from Colorado State University. 6/5
19. Redfearn gave show-me trip to Mr. Wolfe Morseback, Conservationist from Capetown, South Africa. Trip included tour through the Federal Fish Hatchery. 6/14

20. Redfearn, Robbins and Blanchard attended Refuge Managers Conference in Albuquerque. 7/13-21
21. Flower acted as host for visit by Mr. Santosh Sahu from India. 7/15-17
22. Redfearn attended the Federal Executive Association Meeting at Pocatello, Idaho. 10/15
23. Robbins presented a lecture at the local high school on the subject of radio telemetry in wildlife management. 10/25
24. Redfearn was the guest speaker at the Idaho Falls Rotary Club. 10/30
25. Redfearn attended the Federal Executive Association meeting at Rigby, Idaho. 11/19
26. Redfearn and Robbins attended the Jackson Hole Outfitters meeting in Jackson.
27. Redfearn attended the Scenic Resources Forum in Jackson. The subject was billboards in Jackson Hole. 11/19
28. Redfearn taped an interview with Paul Knowles for KSGT broadcast in Jackson. 11/29
29. Redfearn and Robbins attended the Wyoming Outfitters Association. Redfearn was on program on the 7th. 12/5-7
30. Redfearn took George Davis (Executive Director, Outfitters of British Columbia) and Jack Jonas on tour of refuge. Attended Outfitters banquet in evening. 12/7
31. Redfearn interviewed by John Sayre, Pace Magazine. 12/9
32. Redfearn with Emmalyn Payne, local reporter, re article on elk. 12/16
33. Redfearn, Blanchard and Mrs. Redfearn participated in the Audubon Christmas Bird Count. 12/20

Redfearn is a member of the Jackson Hole Rotary Club and attended weekly luncheon meetings and other club functions.

Flower is Civil Defense Director for Teton County. He is also a member of the Jackson Volunteer Fire Department and the National Ski Patrol.

Blanchard is active in the Jackson Gun Club.

D. Hunting

The permit hunt on the refuge was during the three week period from October 12 through November 1, 1968. Sixty permits were issued per week. The 180 hunters killed sixty-eight elk. The breakdown on the harvest was sixteen large bulls, twenty spike bulls, twenty-five cows and seven calves.

Interest in this hunt remains high. A record number of hunters turned out for the drawing for permits when 488 hunters applied for the sixty permits for the week of October 19 - 25.

E. Violations

Only three violations occurred.

4/12/68 Kenneth A. Lindquist (19), P. O. Box 1160, Jackson, Wyoming, "...entered into a restricted area of the refuge to collect antlers. He disturbed the elk herds and destroyed or damaged vegetation of the refuge by considerable driving over the soft terrain in attempting to evade apprehension." He appeared before U. S. Commissioner, Floyd King, and was fined \$100.00 on each of three penalties. Two hundred dollars was suspended.

10/12/68 John W. Gailey (19), P. O. Box 52, Jackson, Wyoming, hunting on refuge with two other men. All had refuge permits but the party shot more than their three allotted elk, having four kills before them. The three hunters decided that John would claim the extra elk and father Robert Gailey would pay the fine. He was fined \$100.00 and \$75.00 of this suspended. A plea of guilty automatically caused his Wyoming guide's license to be revoked.

The following day a fifth elk was found adjacent to the scene, undressed, but it had spoiled.

10/21/68 Terrence E. Brown (14), Wheatland, Wyoming, hunting on the refuge with proper permit accidentally shot two elk. He shot at a cow and made a lethal hit but elk moved off with the group. In following, the youngster spotted one elk behind the group. Thinking it was the wounded one, he shot and killed it. The cow he'd shot originally was down so he ended up with a cow and a calf! The calf carcass was turned over to the Wyoming Game & Fish Department. The case was referred to the Regional Director for a decision on prosecution. No prosecution was made.

F. Safety

Regular monthly safety meetings have been held during the past year.

A new employee brought a new idea to the job that added a margin of safety to our hay feeding operation. Roial Tuescher introduced the use of a one-handed tool for forking off bales that proved to be a safer and more efficient tool than a three-tined pitch fork.

No lost time accidents occurred on the job and it has been 1,704 days since our last lost time accident.

VII OTHER ITEMS

A. Items of Interest

The highlight of the year had to be the public meeting on March 16th which was held to present a recreation plan for the refuge. Regional Director Krummes presided over the meeting. Regional Supervisor Marcus Nelson presented the Recreation Plan as was outlined in the brochure, which had been distributed widely before the meeting. Director John Gottschalk and Senator Clifford Hansen were in attendance to hear statements by interested groups and individuals. Both men made brief remarks for the record, but declined to take firm positions on the subject at the meeting. However, after a thorough review of all statements, the Bureau did revise the recreation plan to conform with the majority opinion as to what the future recreational program should be. A copy of both brochures are

are appended to this report.

The public meeting was precipitated by the controversy with Mr. Wilson of the Teton Valley Ranch as to whether patrons of the ranch would be allowed to conduct trail rides, and generally have unrestricted use of the refuge. The reaction of individuals and organizations to this controversy served to renew our faith in the citizens' interest in conservation matters. In addition to interested individuals, there were statements from representatives of the Wyoming Division of the Izaak Walton League, the Wyoming Wildlife Federation, the National Wildlife Federation, the Wyoming Outdoor Coordinating Council, the Wilderness Society, the Wyoming Game and Fish Department, the Wyoming Outfitters Association, the Scenic Resources Forum of Jackson Hole and Teton County Historical Society. The position taken by all these groups was that no recreational activity should be permitted that might have an adverse effect on the elk herd or have a tendency to encroach upon the winter range. They wanted to be certain that the integrity of the refuge be preserved and that there be no change in the basic purpose for which the area is managed. Mr. Wilson is not a man to give up easily, and even though he lost ground at the public meeting, he took a new tact with the beginning of the irrigation season. He threatened a year earlier to deny refuge employees entry to the control gates and point of diversion of the Warm Springs Ditch, the main water supply for Mormon Row haylands. This year he made good the threat and met the refuge manager at the entrance to Teton Valley Ranch and refused entry. We had been forewarned however, and the Solicitor's Office in Denver had instructed that we press for the confrontation so that legal proceedings could be initiated and a restraining order issued while the matter was taken through the courts. Mr. Wilson's plan was to involve the National Park Service, because it is their land and water right, and hope that he could trade access to the refuge for access to the ditch going through his property. He was still maneuvering for a political intervention and a decision in his favor. When the United States Attorney filed an action with the District Court, he finally agreed to permit entry through his property. The court action was dropped after Mr. Wilson signed a document allowing unrestricted access for water control and ditch maintenance.

We have no way of knowing whether all this controversy affected his decision, but the Teton Valley Ranch is now for sale. The National Park Service is negotiating for the portion of the ranch lying north of the Gros Ventre River and there has been some talk that they might be forced to negotiate for all of the ranch, in which case that portion south of the river would probably become a part of the National Elk Refuge. Funds would come from the Land and Water Conservation Fund. The conflict has had its lighter moments though. Redfearn was presented the "Weenie Wilson Award" at the Rotary Club Christmas party. A copy of the award is included in this report. We believe it indicates the attitude locally and we feel the refuge has actually gained in stature and strength.

Activity by the Teton County Historical Society to preserve the "Miller House" seems to have waned a bit. They made their pleas at the March 16 meeting and later gained the support of the state organization in trying to have the unit designated a National Historical Site. It is questionable that such designation will be made because a preliminary report by the National Park Service classified it as unqualified. Without some source of external or governmental funds, it will likely remain in a state of limbo.

Moral Rearmament continued their discussions and negotiations for an exchange of the 160 acres they have adjacent to Twin Creek Ranch, for refuge land adjacent to the town of Jackson. Their representatives contend their property is as valuable as the refuge property and should be exchanged on a one-for-one basis. The appraisal for the two properties doesn't bear this out however, so there is a question whether this exchange can ever take place.

The Wyoming Highway Commission altered their ideas for locating a tourist information-rest center facility after a couple of meetings with representatives of the Bureau. The latest plan is to utilize a small segment at the south end of the refuge park in conjunction with some of their property and property of the Forest Service. No plans had been finalized by the end of the report period.



THIS IS THE SITE THAT THE WYOMING HIGHWAY COMMISSION WANTED (WANTS?)
TO USE FOR AN INFORMATION BUILDING AND PARKING AREA

A SET OF MATCHED ANTLERS BEING DISPLAYED FOR BIDDERS
AT THE BOY SCOUTS ELK ANTLER AUCTION



* * * WEENIE WILSON AWARD * * *

This certificate will allow the lucky winner the right to one free guided tour, on horseback, with as many guests as the lucky winner cares to bring with him up to 137, over the beautiful and spacious vistas of the T-V Ranch and cook out. There will be a special after-dark tour through the neighboring Elk Refuge unless armed sentries are posted.

A court test to determine ownership of certain roads in the refuge was avoided when the County Commissioners signed an agreement with the Bureau which commits them to paying for the snow removal for the one-half mile from Quarters No. 3 to the gate of Twin Creek Ranch.

The Boy Scouts were again issued a Special Use Permit to retrieve the elk antlers that were dropped on the area. There is some jealousy toward the scouts getting the antlers, but it provides training for them and at the same time they perform a service for the refuge. It is the most important source of income for the troops in the Jackson District. A public auction was held for the first time this year and a record income was realized. An exporter-importer from Hong Kong and another from Los Angeles purchased the bulk of the antlers. The lowest price was \$.84 per pound and the total income was slightly in excess of \$3,000.00. The auction procedure will be continued.

The payment to Teton County under the Revenue Sharing Act was \$22,013.00. This was the third year they have received this amount. This is also the highest amount paid to any county in all Region 2. The amount will likely be adjusted upward rather sharply in a couple of years because of the increase in land values in the area.

It took nearly two years for the Regional Office to come forth with the consent to dispose of some old buildings, but they did (finally), and we got rid of Quarters No. 4, Quarters No. 8 and an old garage at the Quarters 8 site. These were all old log structures that had long surpassed their value to the refuge. We received \$1,056.00 total for these structures and had the added bonus of someone hauling them away, which left very little cleanup for us.

Practically all of the structures and physical facilities on the refuge are wearing out and are getting to look rather ratty. We haven't received any criticism from the Regional Office, mainly because we haven't had a formal inspection since September 23-27, 1965. There is a reason for these conditions

and also a reason for making a point of them in this report. It causes us great consternation to see this deterioration taking place and being unable to do anything about it. With the exception of Quarters No. 1 and two horse barns, every building on the refuge should be removed and new buildings constructed. It will take construction money as per the Master Plan to get things moving in this direction. We realize there probably won't be any money forthcoming any time soon for these purposes. The point we want to make here is the lack of O & M funds in the interim just to try to keep the place looking presentable. The station O & M allotment in FY 1964 was \$120,930.00. In that year \$74,158.00 went for wages for all employees - GS, Wageboard permanent and temporary laborers. This was 61.3% of the total allotment for wages. In the current fiscal year, 1969, the O & M allotment is \$132,700.00. One GS-12 biologist was added to the staff this year and the amount that will go for wages this year is approximately \$112,831.00. This does not take into account rather large wage board salary increases anticipated in February 1969. This amounts to 85% of the total allotment. We have had a 10% increase in total funds from 1964 with a 52% increase in total wages. National indexes indicate prices of all materials and goods have probably increased 15% over this same period. Where does that leave the refuge? It leaves it with a problem of trying to stretch that dollar three and four times, and some things being deferred with the hope that things will get better. This has been presented in this report so that it is a matter of record and will not be passed off as a sob story to get more funds.

The final subject to be discussed under this section is personnel matters. It was with great joy that we welcomed Russell "Buzz" Robbins to the refuge on July 2nd. He came from the position of Assistant Regional Supervisor of River Basins in the Regional Office in Boston to fill the biologist position. The refuge has been without the services of a biologist since Olaus Murie quit the Bureau in the early '40's. Buzz is well qualified to assume the responsibilities of the position and to gather data, interpret that data and present recommendations for management procedures.

We continued to have difficulty in keeping a clerk. Mrs. Jean Lee left in February because Mr. Lee could not find work. Mrs. Nita Hinkle started in March, but left on November 15 because she couldn't meet all her financial obligations on her salary. Mrs. Helen Earthman entered on duty on December 12 and we now have hopes that the position will not be vacant for quite some time.

Refuge foreman James Flower received an Outstanding Performance Award in recognition of the excellent quality and extra effort he brings to his job. It is primarily because of Jim and his ability to bring out the best in the field staff that we have been able to make progress and get the job done in the face of so many adverse conditions. The \$200.00 award was simply a token of his real value.

Sections II and V were prepared by Robbins. Sections I, III, IV and VI were prepared by Blanchard. Redfearn prepared Section VII.

B. Photographs

The Teton scene was taken by Red Sheldon and all other photographs were taken by Redfearn.


C. Signature

Submitted by:

2/19/69


Don E. Redfearn
Refuge Manager

Reviewed, Regional Office


Date 4-26-69 Assistant Regional Director-Operations

RECREATION PLAN

NATIONAL ELK REFUGE

JACKSON HOLE WYOMING

"Winter Home of the World's
Largest Elk Herd"



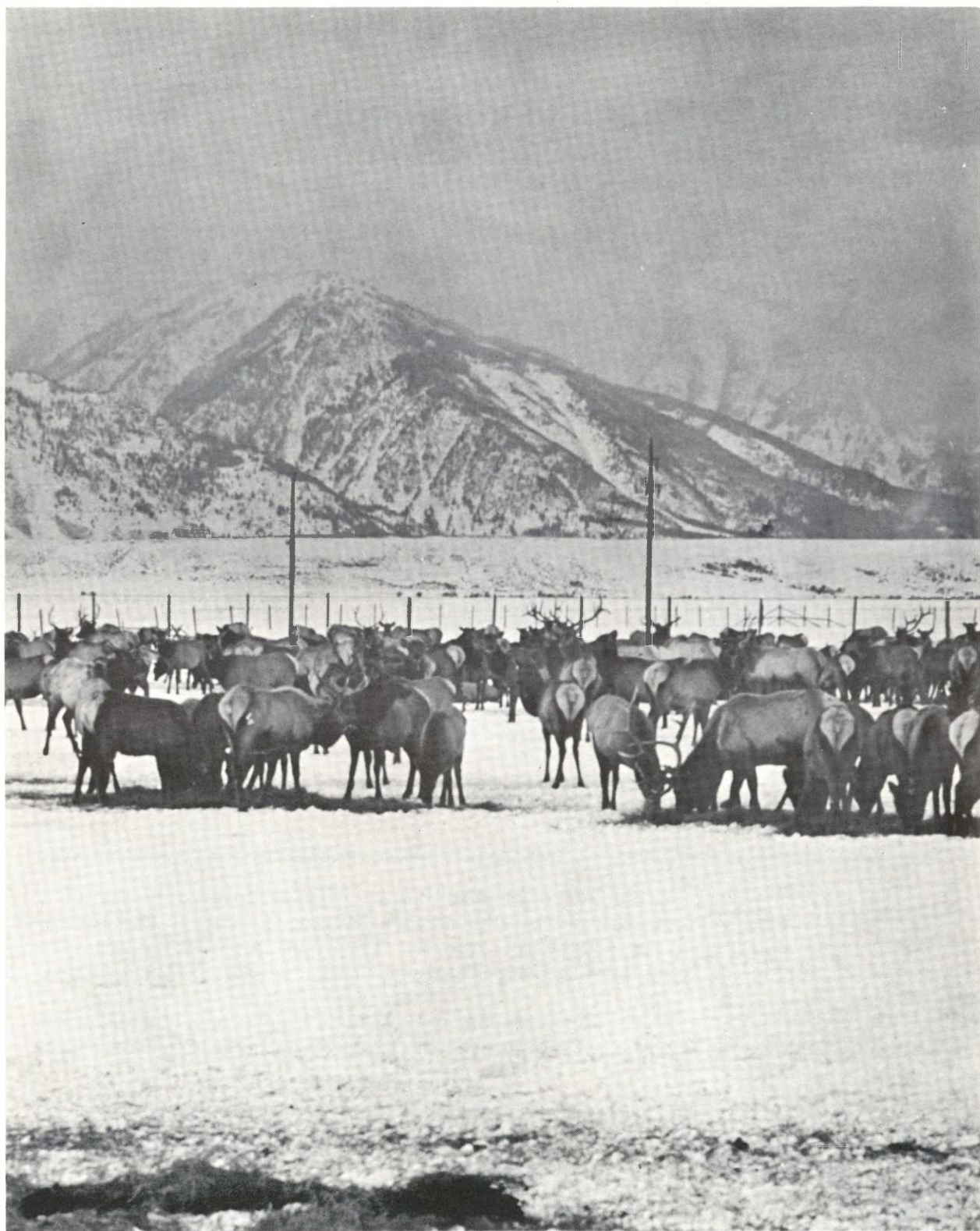
The National Elk Refuge is world-famed as the winter home of America's largest herd of elk. Winter food provided on this Refuge is vital to the future existence of this herd of majestic game animals. Thus, the greatest contribution of the National Elk Refuge is the perpetuation of the Jackson Hole Elk Herd.

The Elk Refuge offers visitors a unique experience. This brochure tells what is planned on the Refuge to give visitors the best possible wildlife-oriented recreational experience.



UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF SPORT FISHERIES & WILDLIFE



Teton Country—Jackson Hole and the surrounding mountains—is one of America's greatest recreational areas. Teton Country is world-famed for its incomparable natural beauty—memorable hiking and pack trips into unspoiled wildernesses—thousands of camping sites—and excellent ski slopes. Teton Country boasts some of the finest trout fishing and big game hunting in the world.

REFUGE OBJECTIVES

One small part of Teton Country is the National Elk Refuge. This Refuge is today and will be tomorrow a place . . .

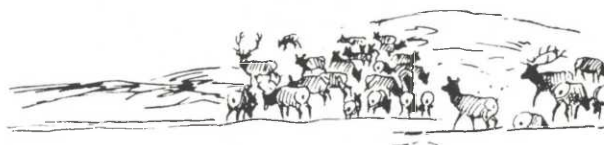


WHERE the Jackson Hole Elk Herd has the winter home it needs for survival.

WHERE moose, deer and bighorn sheep also find a winter home.

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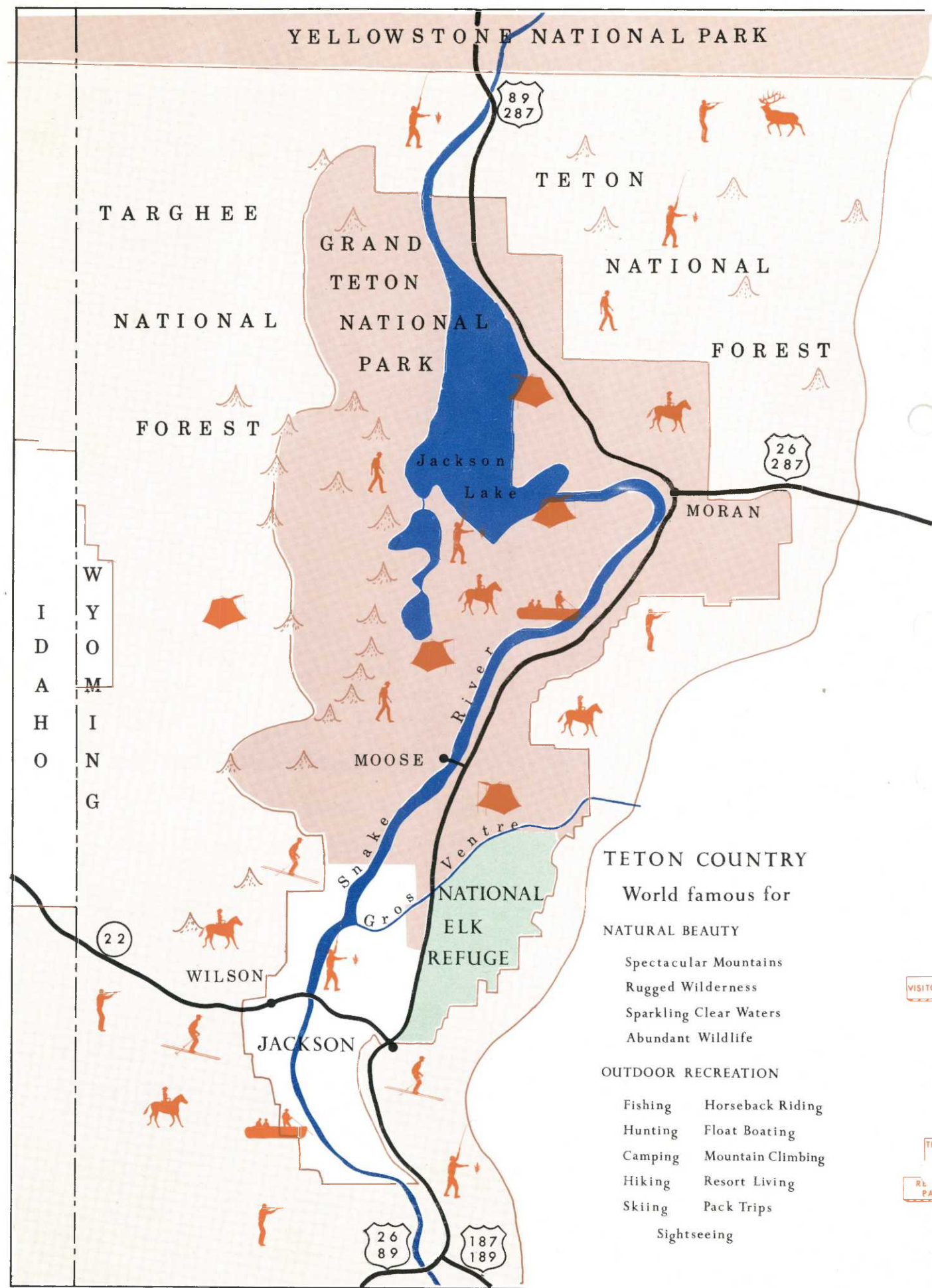
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TETON COUNTRY

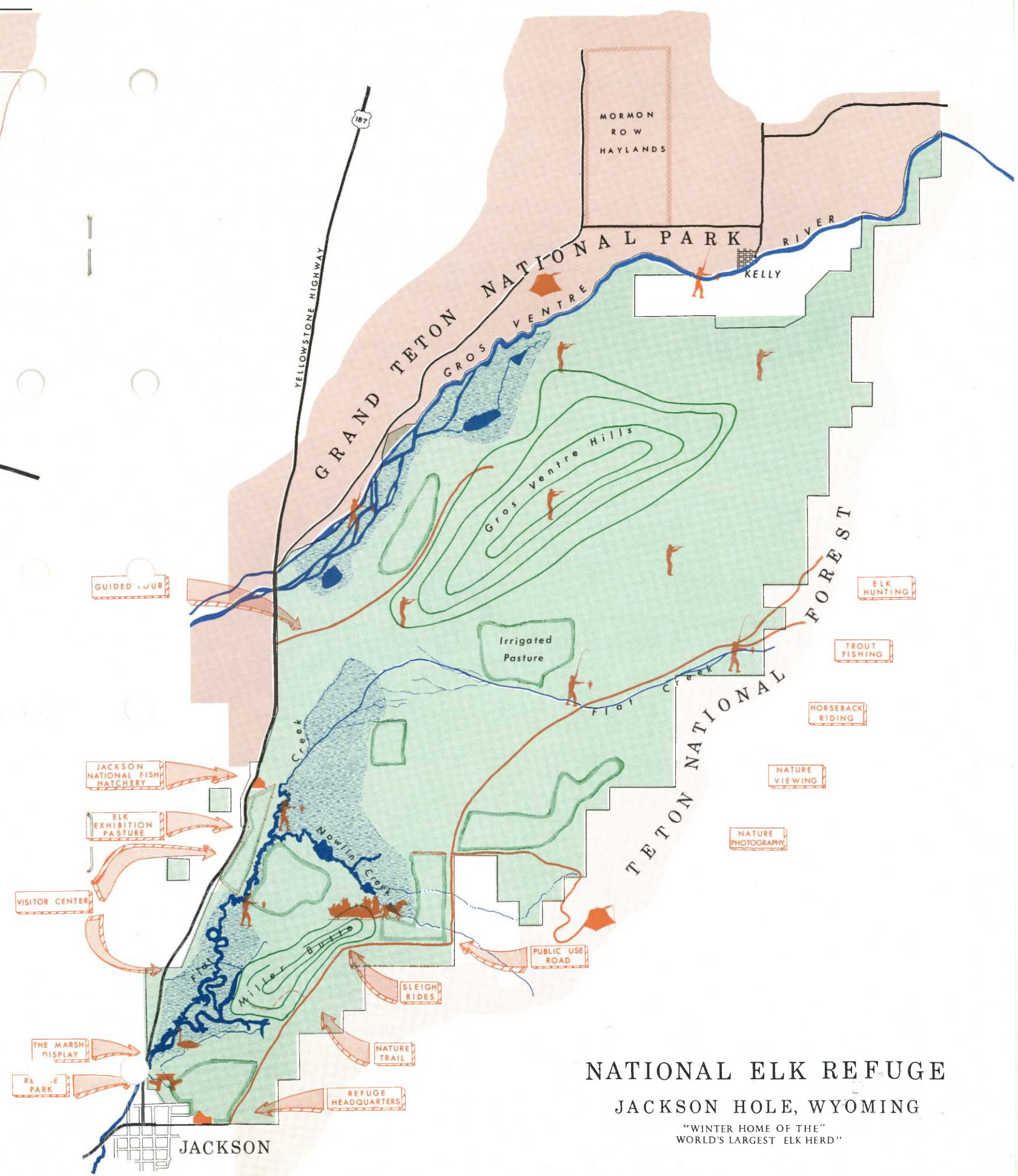
World famous for

NATURAL BEAUTY

Spectacular Mountains
Rugged Wilderness
Sparkling Clear Waters
Abundant Wildlife

OUTDOOR RECREATION

Fishing	Horseback Riding
Hunting	Float Boating
Camping	Mountain Climbing
Hiking	Resort Living
Skiing	Pack Trips
Sightseeing	



NATIONAL ELK REFUGE

JACKSON HOLE, WYOMING

"WINTER HOME OF THE"
WORLD'S LARGEST ELK HERD"

PLANS FOR *Existing Recreational Facilities*



ELK EXHIBITION PASTURE

- This fenced pasture along the Yellowstone Highway, where a few elk are held, will be redesigned. The thousands of summer visitors that stop here will be able to see these magnificent beasts of the forest at closer range.
- A new interpretive display will tell the story of the Jackson Hole Elk Herd and its seasonal migrations.

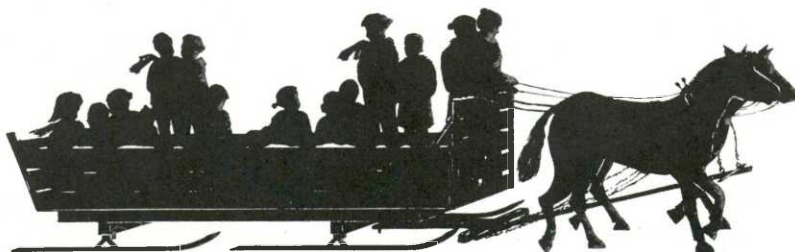
THE MARSH

- This highway turnout, where many visitors see for the first time the rare trumpeter swan, will be enlarged and beautified in cooperation with the Wyoming Highway Department.
- A new interpretive display will explain the value of Flat Creek Marsh to wildlife.



REFUGE PARK

- This popular picnicking spot was developed in cooperation with the City of Jackson, Teton County and the Wyoming Highway Department.



SLEIGH RIDES

- The Jackson Jaycees will continue to sponsor these unique sleigh rides, giving winter visitors a tremendous thrill quietly riding among thousands of elk during the winter feeding operation.
- These horse-drawn sleigh rides will start from the Visitor Center when this building is completed.

JACKSON NATIONAL FISH HATCHERY

- The aquaria and exhibits in this hatchery within the Refuge will continue to attract many visitors.
- Native cutthroat trout and lake trout raised here are stocked in the surrounding National Forests and National Parks making a significant contribution to recreation in Teton Country.



PLANS FOR *Existing Recreational Activities*

FISHING

- Habitat improvement and stocking will improve the quality of trout fishing on Flat Creek and the Gros Ventre River.



HORSEBACK RIDING

- Riders will continue to use the public use roads to enjoy the Refuge and to reach adjacent Forest lands.



ELK HUNTING

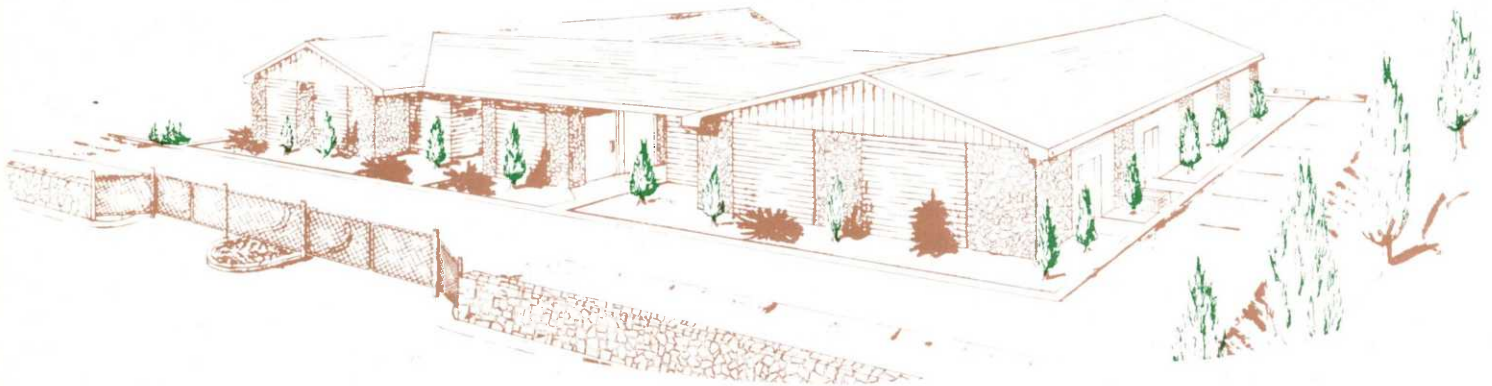
- Elk hunting on the Refuge will be continued. This hunting prevents a build-up of the resident herd and saves forage for wintering elk.
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KID FISHING

- Youngsters will continue to fish their special waters on Flat Creek near the Refuge Park.

PLANS FOR *New Recreational Facilities*



GUIDED TOUR

- A guided tour up the Gros Ventre River is planned.



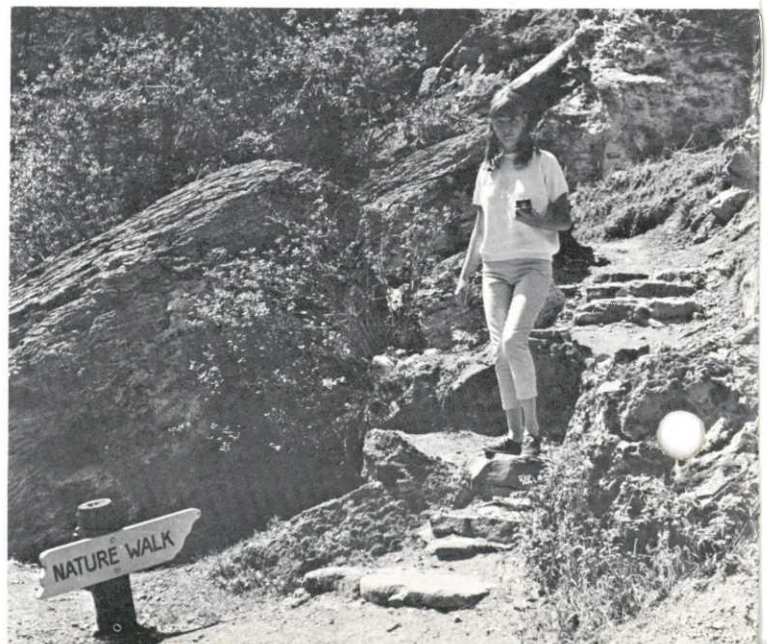
- Regularly scheduled bus tours, starting at the Visitor Center, will take summer visitors up the Gros Ventre to see and learn about the abundant wildlife inhabiting the marshes, fields and woods.

VISITOR CENTER

- This building, to be located along Highway 187, will house exhibits telling the complete story of the Jackson Hole Elk Herd.
- Exhibits will depict the history of the herd and tell the story of the cooperation between private citizens and State and Federal agencies that has made this herd one of the best managed in the world.
- It will be designed to make it one of the outstanding tourist attractions in Jackson Hole.

NATURE TRAIL

- A self-guided walking trail is planned to the top of Miller Butte, where the view of Flat Creek Marsh and the Grand Tetons is spectacular.
- A booklet will be provided explaining the many things of interest along the trail.
- Signs and displays along the trail will identify animal signs, the profusion of wild flowers and other things of interest.

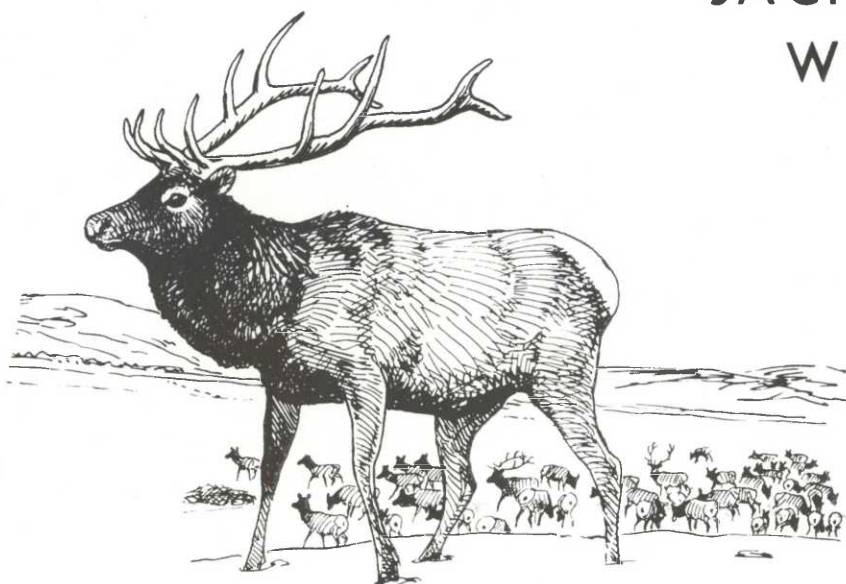


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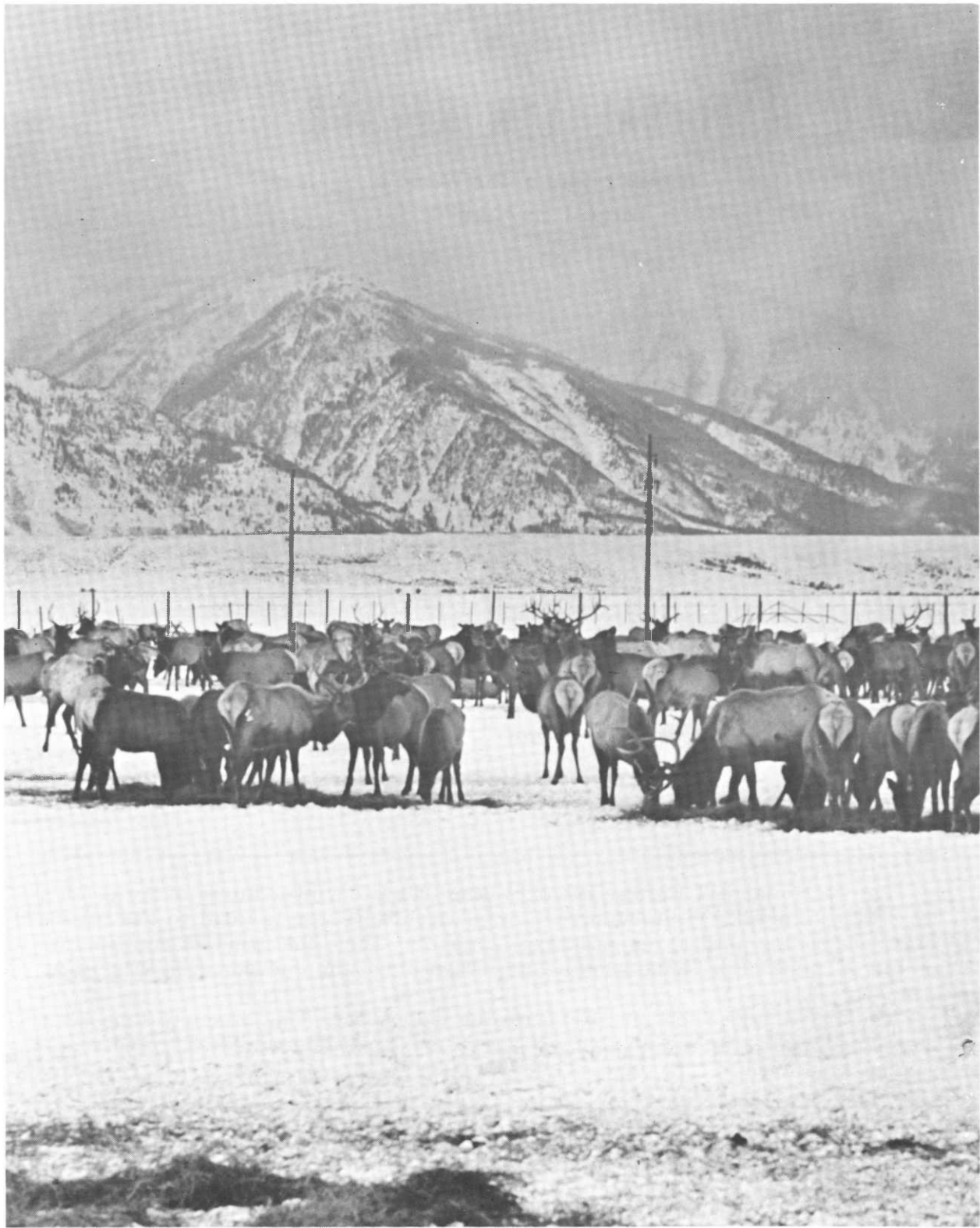
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FISH AND WILDLIFE SERVICE

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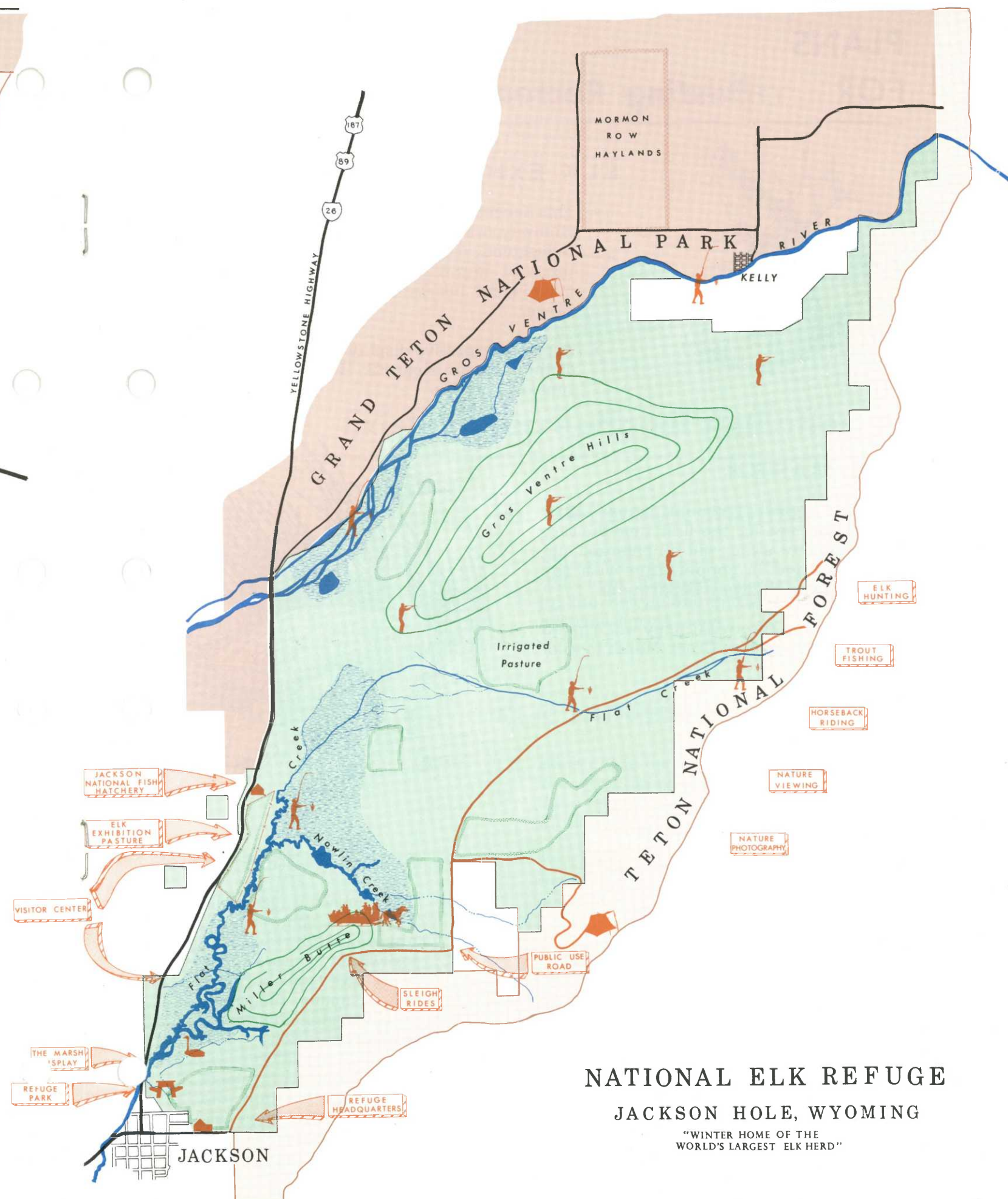
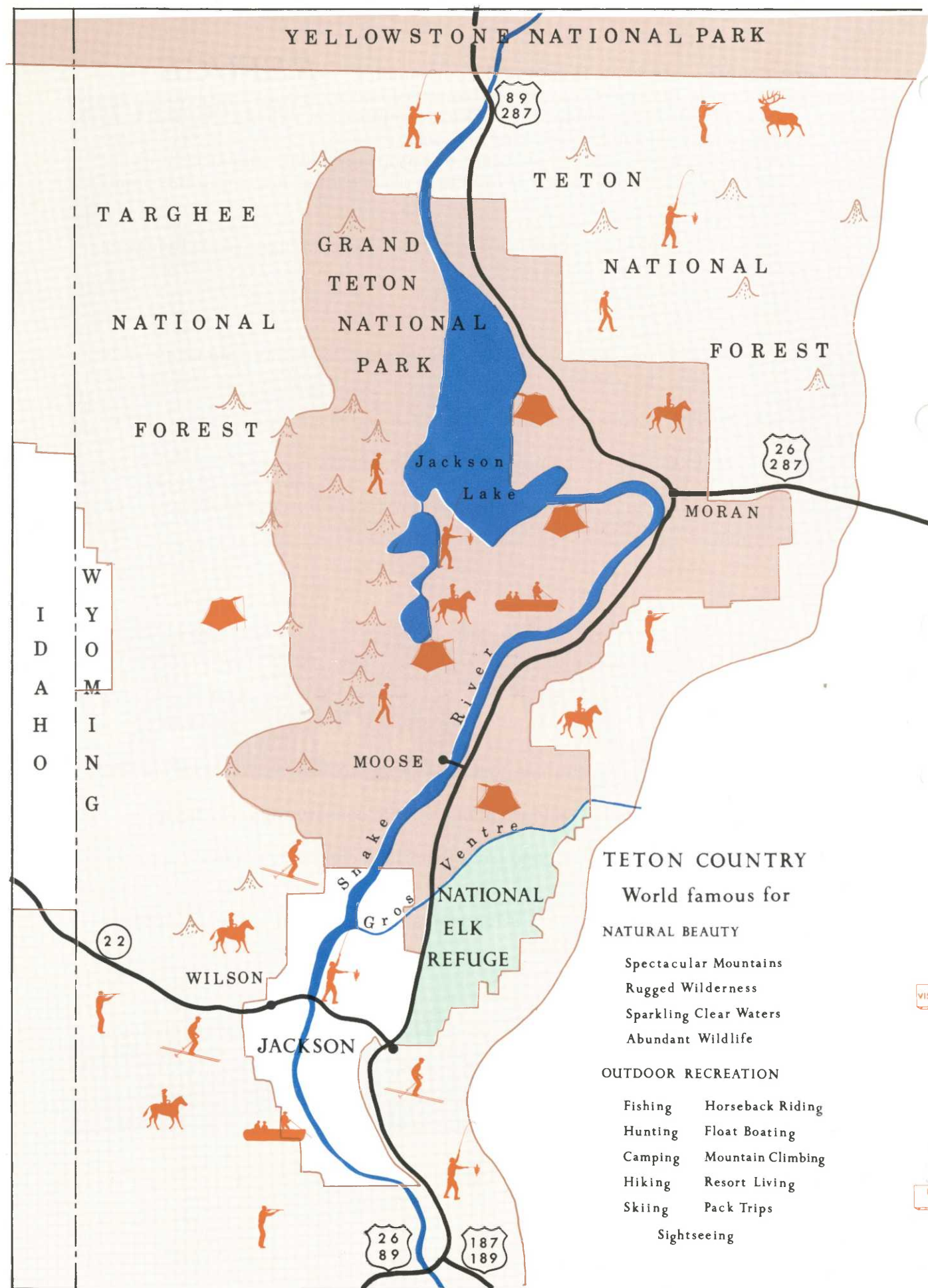
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PLANS FOR *Existing Recreational Activities*

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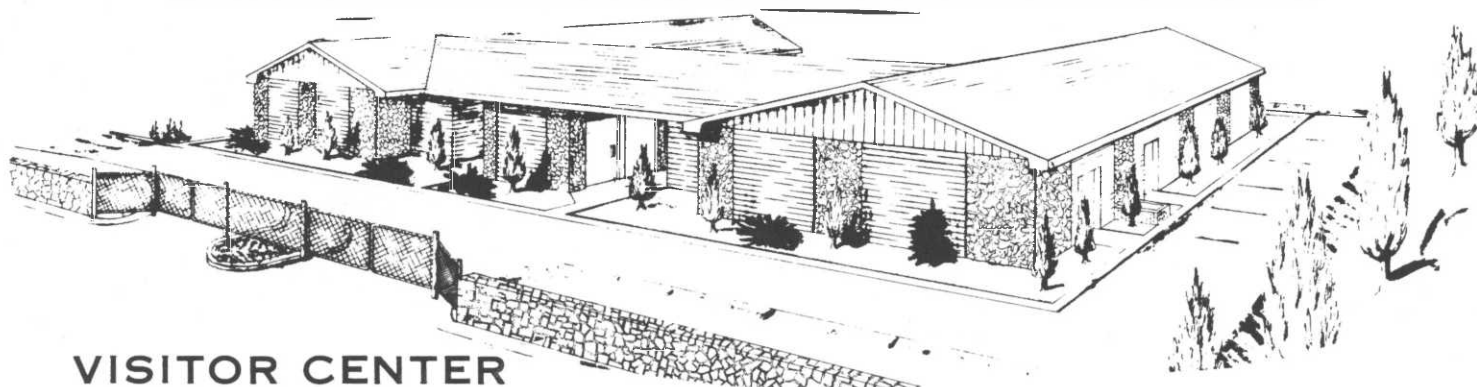
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- It will be designed to make it one of the outstanding tourist attractions in Jackson Hole.
- The Elk Exhibition Pasture will eventually be near the Visitor Center. In the interim, refuge personnel will be stationed at this highway turnout to interpret the story of the Jackson Hole Elk Herd for summer visitors.

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's Department of Natural Resources.

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States— now and in the future.

A good representation of the herd structure are held here April thru August. Old mature bulls, medium aged bulls, spike bulls, cows and calves are all here for the visitor to see and compare. Here too is the opportunity for visitors to observe and marvel at the rapid antler growth, because the antlers are in "velvet" most of the period these animals are in the pasture.

GPO 846 - 390



(Rev. March 1953)

WATERFOWL

REFUGE National Park, Jackson, Wyoming

MONTHS OF January TO April 30, 1988

[illegible]

3 -J. /A

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE National Elk, Jackson, WyomingMONTHS OF January TO April 30, 1968

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11	12	13	14	15	16	17	18		
Swans:										
Whistling										
Trumpeter										2,200
Geese:										
Canada										1,800
Cackling										
Brant										
White-fronted										4
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	2200	27	none	Principal feeding areas warm springs where swan were fed,
Geese	600	12	none	lower Flat Creek.
Ducks	2500	200	none	Principal nesting areas lower refuge area (geese)
Coots	100	8	none	
				Reported by <u>Don S. Radford</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

(Aug. 1952)

Refuge National Elk Months of January 1 to April 30, 1948

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Greater Sandhill Crane	2	3/29	12	4/12	4	4/30	-	-	-	300
Great Blue Heron	1	3/2			1	4/26	-	-	-	45
II. <u>Shorebirds, Gulls and Terns:</u>										
Common Snipe	1	4/30	-	-	1	4/30	-	-	-	present

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove										
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	1	2/21	1	2/21	1	2/21	-	-	-	100
	Year around resident						-	-	-	5,000
	Year around resident						-	-	-	5,000
	41	4/17	41	4/17	41	4/17	-	-	-	400
V. <u>Bald Eagle</u>	1	1/10	2	3/28	1	4/3	none	none	none	200
Reported by							Don E. Sedfearn			

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

WATERFOWL

REFUGE National Elk Refuge
Jackson, Wyoming

MONTHS OF May TO August, 19 68

[illegible]

3 -7. 1A

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE National Elk Refuge
Jackson, WyomingMONTHS OF May TO August, 1968

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling									2,000	2	6
Trumpeter											
Geese:									3,000	4	21
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard											
Black											
Gadwall											
Baldpate											
Pintail											
Green-winged teal											
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:											10

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	2,000	10	8	Principal feeding areas <u>Flat Creek, Howlin Creek,</u>
Geese	1,000	25	21	<u>and Gros Ventre bottoms</u>
Ducks	30,000	250	150	Principal nesting areas <u>sage</u>
Coots	5,000	50	20	
				Reported by <u>Don E. Redfearn, Refuge Manager</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

(Aug. 1952)

(Other than Waterfowl)

to August

19 68

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
ndhills	8	5/1	8	8/10	2	8/27		1	2	500
eat Blue Heron	1	5/12	2	6/22	1	8/22			none	200
II. <u>Shorebirds, Gulls and Terns:</u>										
(over)										

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge National Elk Refuge For 12-month period ending August 31, 1968

Reported by Don E. Redfearn Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat		(3) Use-days	(4) Breeding Population	(5) Production
	Type	Acreage			
	Crops	0	Ducks	72,500	250
	Upland	20,849	Geese	11,100	8
	Marsh	2,849	Swans	5,450	4
	Water	40	Coots	7,650	25
	Total	23,754	Total	95,700	287
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.
- (5) **Production:** Estimated total number of young raised to flight age.

W A T E R F O W L

REFUGE NATIONAL ELK REFUGE, JACKSON, WYOMING

MONTHS OF September 1 TO December 31, 1968

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
	:	:	:	:	:	:	:	:	:	:
<u>Swans:</u>										
Whistling		4	8	6	4	23	5	17	6	10
Trumpeter										
<u>Geese:</u>										
Canada		16	0	23	0	68	0	0	0	7
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard		90	60	70	80	73	78	92	86	103
Black										
Gadwall		36	88	144	110	66	97	80	41	37
Baldpate		45	83	30	23	9	0	0	0	1
Pintail		23	30	51	32	23	40	20	9	19
Green-winged teal			36	105	131	251	245	252	153	152
Blue-winged teal		43	2	1						
Cinnamon teal										
Shoveler		6	12	1	1					
Wood										
Redhead							3			
Ring-necked		2	15	11	5	6		2	3	3
Canvasback		2	2	10						
Scaup										
Goldeneye					3		1	4	7	8
Bufflehead							4	7	10	5
Ruddy										
Other (Unidentified)		23	47	89	15		4		26	53
<u>Coots</u>		342	263	169	74	37	18	14	1	

3 -2. 1a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE National Elk Refuge, Jackson, WyomingMONTHS OF September 1 TO December 31, 1968

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling			10	2	12	3	8		975		9
Trumpeter	2										
Geese:											
Canada	129		6	36	243	20	0		4,700		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	162		32	23	36	21	31		8,418		
Black											
Gadwall	31		19	7	23	18			6,954		
Baldpate	2								1,501		
Pintail	25		22		1	1	7		2,684		
Green-winged teal	78		77	41	24	18	28		3,908		
Blue-winged teal									420		
Cinnamon teal											
Shoveler									175		
Wood											
Redhead									21		
Ring-necked	17		9	10	7	8	2		854		
Canvasback									140		
Scaup											
Goldeneye	4		12	20	9	5	293		2,900		
Bufflehead	8		5	2	14	4	2		475		
Ruddy											
Other (Unident- ified)	5		38	8	40				2,450		
Coot:									7,500		
					(over)						

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	975	23		Principal feeding areas
Geese	4,700	243		
Ducks	40,900	512		Principal nesting areas
Coots	7,500	342		
				Reported by <i>Don E. Redfearn</i>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

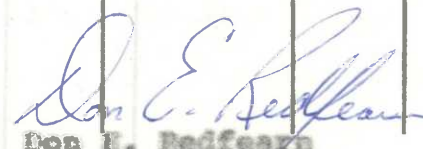
- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Form 1A
(Aug. 1952)

(Other than Waterfowl)

Refuge NATIONAL ELK REFUGE Months of September 1 to December 31, 1948
JACKSON, WYOMING

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production		(6) Total	
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Upland cranes	2	3/29	14	4/12	11	9/19		2	4	15
Least Blue Herons	1	3/2	1	4/26	1	4/26		None		6
II. <u>Shorebirds, Gulls and Terns:</u>										
(over)										

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Peak numbers in the refuge would not exceed ten birds. No nesting attempts.				
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	1	2/21	1	2/21	1
Osprey	1	8/23	1	8/23	1
Bald eagle	1	1/10	5	8/14	1
Reported by  Don E. Redfearn					

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1752

Form NR-2

(April 1946)

UPLAND GAME BIRDS

Refuge National Elk Refuge
Jackson, WyomingMonths of January 1 to April 30, 1968

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs 'v' d.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage grouse	Sage flats, hills and hay meadows 22,500 acres	450			1:1				50	
Ruffed grouse	Aspen hills and creek bottoms and along Gros Ventre 2,000 acres	135			1:1				10	
Dusky grouse	Timbered area 500 acres	100			1:1				5	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | | |
|---------------------|--|
| (1) SPECIES: | Use correct common name. |
| (2) DENSITY: | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. |
| (3) YOUNG PRODUCED: | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. |
| (4) SEX RATIO: | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. |
| (5) REMOVALS: | Indicate total number in each category removed during the report period. |
| (6) TOTAL: | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons. |
| (7) REMARKS: | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested. |

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge National Elk Refuge

Months of May 1 to August 31, 19 68

(1) Species	(2) Density	(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
		Acres Cover types, total acreage of habitat	Number broods obs'd. Estimated Total		Hunting	For Re- stocking	For Research		
Common Name				Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage Grouse	Sage Flats, hills and hay meadows 22,500	564		1.1				40	
Ruffed Grouse	Aspen & Creek bottoms 2,000 acres	135		1.1				10	
Dusky Grouse	Timber areas 500 acres	100		1.1				6	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | | |
|---------------------|--|
| (1) SPECIES: | Use correct common name. |
| (2) DENSITY: | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. |
| (3) YOUNG PRODUCED: | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. |
| (4) SEX RATIO: | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. |
| (5) REMOVALS: | Indicate total number in each category removed during the report period. |
| (6) TOTAL: | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons. |
| (7) REMARKS: | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested. |

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge NATIONAL ELK REFUGE

Months of September 1 to December 31, 1968

(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage grouse	Sage flats and hills and hay meadows 22,500 acres	564		1:1				40	
Ruffed grouse	Aspen and creek bottom areas Gros Ventre 2,000 acres	135		1:1				10	
Dusky grouse	Timber areas 500 acres	100		1:1				5	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-171
Form NR-3
(June 1945)

BIG ME

Refuge NATIONAL ELK REFUGE

Calendar Year 1968

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number								Number	Source		
ELK	23,714	None									6809		
	<u>Refuge feed ground census</u> <u>February 15, 1968</u>												
	Large bulls	689											
	Spike bulls	429											
	Cows	4,465											
	Calves	1,076											
	Unclassified	150											
	Total	6,809											

Remarks: of interest:

24.1 calves per 100 cows
last year ratio was 32.8/100 cows

Reported by Don E. Redfearn

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form NR-4
(June 1945)

SMALL MAMM

Refuge National Elk Refuge Year ending April 30, 1968

(1) Species Common Name	(2) Density Cover Types & Total Acreage of Habitat		(3) Removals						(4) Disposition of Furs					(5) Total Popula- tion
			Hunting	Fur Harvest	Predator Control*	For Re- stocking	For Re- search	Share Trapping Permit Number	Trappers Share	Refuge Share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
Coyotes	All land and marsh areas 23,754 acres	118	-	-	-	-	-	-	-	-	-	-	-	200
Striped Skunk	20,000	10,000	-	-	-	-	-	-	-	-	-	-	-	2
Badger	20,000	1,000	-	-	-	-	-	-	-	-	-	-	-	20
Mink	3,500	700	-	-	-	-	-	-	-	-	-	-	-	5
Masked	3,500	35	-	-	-	-	-	-	-	-	-	-	-	100
Beaver	1,500	50	-	-	-	2	-	-	-	-	-	-	-	30

*List removals by Predator Animal Hunter

REMARKS:

Reported by Don E. Redfearn

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i.e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

Refuge NATIONAL ELK REFUGE, JACKSON, WYOMING Year 1968

Botulism

Lead Poisoning or other Disease

Period of outbreak None

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks None

Kind of disease None

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks No dead or sick waterfowl noted.

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge NATIONAL ELK REFUGE, JACKSON, WYO Year 1956

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
NO PLANTINGS UNDER THIS CLASSIFICATION								

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....
Hedgerows, cover patches.....
Food strips, food patches.....
Forest plantings.....

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge NATIONAL ELK REFUGE, JACKSON County TETON State WYOMING

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
<u>FORAGE CROPS</u>									
Alta Fescue					20		38		20
Russian Wild Rye					16				16
Orchard Grass					18				18
Meadow Foxtail					38				38
					92				
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations _____

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Hay crop at Mormon Row	1859	1100	None	1. Cattle Elk	6809	42,736	None	23,714
				2. Other Horses	23	276	None	23,714
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				3,976

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

REFUGE GRAIN REPORT

Refuge NATIONAL ELK REFUGE, JACKSON, WYOMonths of January 1 through Dec. 31, 1968

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Wheat	480	None	480			270	270	210		2;0	None

(8) Indicate shipping or collection points _____

(9) Grain is stored at Refuge grain bin 1/4 mile east of shop

(10) Remarks _____

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

TIMBER . MOVAL

Refuge..... NATIONAL ELK REFUGE, JACKSON, WYO..... Year 195~~5~~ 68

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
NO TIMBER REMOVALS DURING THE YEAR								

Total acreage cut over..... Total income.....

No. of units removed B. F. Method of slash disposal.....

Cords.....

Ties.....

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

1968

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

[illegible]

10. Summary of results (continue on reverse side, if necessary)

NO PESTICIDE USE TO REPORT THIS YEAR